

above, bright yellow beneath *; an oblique blackish stripe from in front of the dorsal to the base of the ventral; upper surface of head and opercular fold black; pectoral fins yellow, ventrals black; dorsal, anal, and caudal fins grey at the base, black at the end.

Total length 130 millim.

A single specimen from Lake Oguta, presented to the British Museum by Dr. Ansorge.

EXPLANATION OF PLATE III.

Citharidium Ansorgii, natural size, with enlarged view of scales from the middle of the body.

XXVI.—*Descriptions of new Genera and Species of Hymenoptera from the Oriental Zoological Region* (Ichneumonidæ, Fossores, and Anthophila) †. By P. CAMERON.

Ichneumonidæ.

Aglaojoppa Rothneyi, sp. n.

Nigra, late flavo-maculata; pedibus flavis, anterioribus nigro-lineatis; femoribus posticis rufis; alis hyalinis, stigmatæ testaceo.

♀ et ♂.

Long. 18 mm.

Hab. Khasia Hills.

Antennæ black; the scape and the flagellum to beyond the middle yellow beneath. Head yellow; the middle of the vertex, of the front, the occiput, and a band on the outer orbits above the middle black. Face and clypeus closely punctured, the clypeus less strongly than the face, and its sides are impunctate. The front in the middle bears shallow moderately large punctures and is furrowed down the centre. Mandibles black, yellow at the base; the palpi yellow. Thorax black; the upper third of the prothorax, two longitudinal lines on the centre of the mesonotum, the scutellum, postscutellum, the basal half of the scutellar keels, a transverse line near the base of the areola, the sides at its apex, a large obliquely narrowed mark on the outer side of the lateral basal areæ, the posterior median, and the spiracular (except at

* On the fish being transferred to fresh spirit on its arrival, this colour disappeared in a few hours, staining the spirit a vivid yellow.

† The species are mostly in the collection of Mr. G. A. J. Rothney.

the base and more narrowly on the lower side) yellow. The lower part of the propleuræ, the greater part of the mesopleuræ, the mesosternum, and the apex of the metapleuræ broadly yellow. Mesonotum punctured, but not very closely or strongly; the scutellum is less closely punctured; the postscutellum more closely and distinctly, except at the apex, which is smooth. The areola is irregularly rugosely punctured; the sides at the apex are depressed and transversely striated; the posterior median area is closely irregularly reticulated; the outer basal areæ are closely and strongly punctured, the base smooth and the sides striated. Propleuræ punctured, but not strongly, the apex striated, more strongly in the middle. Meso- and metapleuræ closely punctured; the spiracular area is strongly, closely, obliquely striated. The four anterior legs pale yellow; the femora broadly lined behind with black; their tibiæ have an interrupted black line: the hinder coxæ are yellow, irregularly and largely marked with black in front and behind; the femora rufous, with the extreme apex black; the tibiæ yellow, with the apical third black. Abdomen black; the postpetiole, two large apical marks on the second, third, fourth, and fifth segments, and smaller ones on the sides of the sixth and seventh, yellow; the marks become smaller towards the apex and extend backwards beyond the middle. The petiole is opaque, its sides irregularly transversely striated; the postpetiole is closely longitudinally striated; the second and third segments are longitudinally striated in the middle; the gastrocœli are smooth, with two stout transverse keels on the inner side at the base and two longitudinal ones on the outer side. Wings hyaline, with a slight fulvous tinge; the stigma fuscous, the nervures black.

This is the largest species of the genus.

ERYTHROJOPPA, gen. nov.

Scutellum pyramidal, distinctly raised above the level of the mesonotum; its basal slope short and rather steep, its apical longer and gradual; its sides below the raised part carinate. The depression between the metathorax and median segment is deep, the base of the median segment being raised; the areola is small, is not defined laterally by keels, and is not depressed; the posterior median becomes gradually wider to the apex, its bounding keel is roundly curved; there are only two central and two lateral areæ, besides the spiracular. Labium projecting; the apex of clypeus transverse. Abdomen long and narrow, more than twice the length of the

thorax; the postpetiole is clearly separated; the second segment has the basal half in the middle longitudinally striated; the ventral keel is only on segments 2, 3, and 4; the apical one is blunt and is nearly as long as the penultimate. Legs moderately long; the tarsi are spinose; the hinder femora do not reach to the apex of the third segment. Areolet 4-angled, the nervures touching at the top; there is a distinct nervure on the discocubital nervure and an indistinct one on the recurrent nervure, which is angled in the middle; the transverse basal nervure is interstitial.

Of the Indian genera of Joppini this genus most nearly resembles *Facydes* and *Pachyjoppa*, which agree with it in having a pyramidal scutellum; both differ in having the apex of the wings clouded and in the transverse basal nervure not being interstitial. *Pachyjoppa* differs further in the areola being bounded by raised keels, in the median segment being stoutly spined, and in the postscutellum being keeled behind; the areola in *Facydes* is flatter, is keeled laterally, but not at the apex, it being confluent with the posterior median area; the malar space is greater and the head behind is not so obliquely narrowed, it being more rounded.

Erythrajoppa ferruginea, sp. n.

Ferruginea, apice flagello antennarum, abdominis segmentis 2-6 tarsisque posticis nigris; alis fuliginosis, nervis stigmatique nigris. ♂.

Long. 16 mm.

Hab. Khasia Hills. Coll. Rothney.

The tenth and eleventh basal joints of the antennæ are rufous, the others black; the scape is punctured and sparsely covered with short black hair. Face and clypeus bearing shallow punctures, ferruginous, the sides of the face broadly and distinctly yellow; the labrum is fringed with long fulvous hairs; the mandibular teeth black; the palpi yellowish. Front and vertex shining, impunctate, the vertex thickly covered with black hair; the ocelli in front are surrounded by a deep furrow, the sides opposite their lower part are finely transversely striated, the inner orbits above distinctly margined. Mesonotum closely and strongly punctured and darker in tint than the rest of the thorax: the pyramidal scutellum has a curved slope at the base, the apex has a longer oblique one; it is sparsely covered with large deep punctures and clothed with long dark hairs; the depression at its base and the keels are deep black: the postscutellum is very smooth and shining, distinctly bifoveate at the base;

the lateral depression is wide and deep, deep black, and bearing some stout longitudinal keels. There is a deep depression between the apex of the postscutellum and the base of the median segment; the depression is black at the base on the bottom and on the lower part of the apex; the middle of the raised part projects above the level of the postscutellum; the centre is raised, is very smooth and shining; the sides are obliquely depressed from it; the segment has a rounded slope from the base at the top to the apex and is coarsely and closely punctured; the centre of the segment from the raised central part to the apex is bordered on either side by a stout keel, which diverges roundly towards the apex; inside of this in the centre is a narrower keel, which splits in two shortly before the middle; the space enclosed by these keels is deep black and is stoutly transversely striated, but not so strongly and more closely than on the central area; the lateral areas are closely reticulated, the keels bounding them form a triangle; the spiracular area at the base is closely and rather strongly punctured; its apical half bears seven or eight stout oblique keels, which become stouter and more widely separated towards the apex. The apex of the median segment and the metapleuræ behind the coxæ are deep black. Propleuræ closely punctured; the depressed middle is deep black, smooth, except for a few oblique striations on the lower side. Mesopleuræ closely punctured; the apex is deeply furrowed and crenulated; the base of the metapleuræ deep black, broad at the top, becoming narrowed below; the depression is deep and much wider above than below; below the middle are two stout keels; the rest of the metapleuræ closely and strongly punctured; the apex with some indistinct striations; the mesopleuræ black under the wings and down their base, and the base of the mesosternum is black; the apex is slightly curved and projects somewhat triangularly at the sides; the centre is deeply furrowed. Wings fusco-violaceous, lighter in tint towards the base; the costa, stigma, and nervures black; the areolet is narrowed at the top, being about one half of the length of the space bounded by the recurrent and the second transverse cubital nervures; the recurrent is received shortly beyond the middle of the areolet. The four anterior tarsi are infuscated towards the apex; the hinder black, rufous at the base. Petiole elongate, longer than the second segment; the middle of the postpetiole is depressed at the base and strongly longitudinally striated, the sides punctured. The second segment in the middle is strongly longitudinally striated, the striations reaching to near the apex and becoming finer there. Gastrocœli wide, deep, smooth, except for a few irregular broken striæ at the base; the third segment

is finely and closely striated down the middle, the fourth still more finely and less distinctly.

BYSTRA, gen. nov.

Scutellum flat, its sides, and apex to a less extent, stoutly keeled. Abdomen with eight segments, its ovipositor projecting. Tibiæ and tarsi spinose. Labrum projecting. Mandibles with a large upper and a shorter lower tooth. Median segment completely areolated, its spiracles linear. Antennæ stout, dilated, and compressed before the apex. Occiput margined, but not sharply. Apex of median segment with a straight somewhat abrupt slope. The ventral keel is on segments 2, 3, 4, and on the base of the fifth, reaching to the base of the ovipositor. Areolet 5-angled.

Belongs to the Oxypygi. From *Ichneumon* it may be known by the abdomen having eight instead of seven segments. In having eight dorsal segments it agrees with *Exephanes*, from which it may be known by the flatter sharply keeled scutellum, by the tibiæ and tarsi bearing stiff spines, and by the dilated antennæ. The transverse basal nervure is interstitial; the stump of a nervure on the discocubital is large; the areola of metanotum is not quite horse-shoe-shaped, its sides at the base being stronger, not curved; the basal joints of the flagellum are not elongate, but still longer than broad; the ovipositor extends to the apex of the fifth ventral segment and largely projects.

Bystra testacea, sp. n.

Testacea, nigro-maculata, facie, orbitis oculorum, coxis trochanteribusque pallide flavis; alis fere fusco-hyalinis, stigmatibusque testaceis. ♀.

Long. 15 mm.

Hab. Khasia Hills.

Scope of antennæ pale yellow; the basal sixteen joints of the antennæ testaceous, the apical black, compressed and dilated before the apex, which is narrowed. Head pallid yellow; the middle of the front, vertex, and occiput broadly testaceous. Face and clypeus sparsely punctured, almost bare, shining; the front and vertex shagreened, almost punctured; labrum smooth, fringed with pale hair. Mandibles smooth, the teeth black. Thorax rufo-testaceous; the pleuræ paler, yellowish; the apex of the pronotum, a small mark on the base of the propleuræ above the middle, the part below the tubercles, an oblique mark above the centre of the mesopleuræ, a mark above the middle coxæ, a line along the base of the mesonotum, a mark in its centre, one on its apex before

the scutellum, one behind the middle of the scutellum, its sides at the apex, the lateral basal area on the median segment, a mark on the base of the supramedian area, the greater part of the upper three fourths of the posterior median area, and a mark on the upper part of the metapleuræ, black. Mesonotum closely granular. The scutellum is much more strongly and not so closely punctured, especially in the centre, the sides and the apex being smooth. Postscutellum smooth. The base of the median segment is smooth, the basal area is slightly depressed in the middle, the supramedian is longer than broad, 6-angled, the apex roundly curved inwardly. Pro- and mesopleuræ smooth, except behind; the metapleuræ are closely and distinctly longitudinally striated. Mesosternum obscurely transversely striated. Coxæ, trochanters, and the lower side of the femora pale yellow; the tibiæ testaceous, the hinder darker than the anterior; the tarsi are of a darker testaceous colour; the tibial spines are dark rufous, the tarsal of a paler colour. The cubitus is widely bullated before the apex, its nervure is large, as is also that on the recurrent nervure, which is received beyond the middle. Abdomen rufo-testaceous, the sides and apex of the petiole and the apical segments paler, the second to fourth segments broadly blackish at the base.

HIORADA, gen. nov.

♂. Face and clypeus broadly and roundly dilated in the middle, a broad furrow on either side of the dilated part; the clypeus not separated from the face; the face at the top triangularly depressed in the middle. Mandibles with one large apical and a short subapical tooth. Apex of clypeus broadly rounded. Labrum hidden. Occiput margined. Scutellum roundly convex, its sides stoutly keeled, the sides of the postscutellum broadly depressed at the base. Median segment completely areolated, its spiracles linear. Areolet 5-angled, narrowed at the tip; the cubital, the second transverse cubital, and the recurrent nervure in two places largely bullated. Legs stout, the tarsi spinose. Abdomen with seven segments; the petiole becomes gradually dilated from the middle to the apex; the postpetiole is not perceptibly bent and bears the spiracles near the base; the ventral keel is on segments 2, 3, and 4; the sides of the segments project distinctly at the apex; the last segment is large and is brought gradually to a point; the epipygium is larger than the last segment, is flat, and bears a transverse furrow in the middle.

Belongs to the Oxyptigi. The distinctive characters are the dilated face and clypeus, the unequally toothed mandibles, the keeled scutellum, and the petiole only very slightly curved

at the apex. There is a short stump of a nervure on the cubital-discoidal nervure; the transverse basal nervure is interstitial; the basal joints of the flagellum are longer than broad. Characteristic is the fact of the face and clypeus being broadly and distinctly dilated in the middle and forming one piece.

Hiorada bilineata, sp. n.

Testacea, capite pleurisque flavis, nigro-maculatis; mesonoto nigro, flavo bilineato; pedibus testaceis, coxis trochanteribusque flavis; alis hyalinis, stigmatibus testaceo. ♂.
Long. 12–13 mm.

Hab. Khasia Hills.

Scape of antennæ pallid yellow; the basal half of the flagellum brownish, the apical black, serrate, closely pilose. Head lemon-yellow, shining; the centre of the front, the ocellar region, and the occiput broadly black. The face and clypeus shining, sparsely punctured, almost bare; the front is somewhat more distinctly punctured. Mandibles lemon-yellow, the teeth black. Thorax testaceous, the sides with a more yellowish tint. Mesonotum black, with two lines down the middle. Scutellum with a large black mark, triangularly narrowed at the base in its centre, and an oblique mark on its sides behind. The basal area of the median segment, the greater part of the posterior median area, a line on the outer area touching the black on the central, a large mark (rounded above) on the propleuræ, one below the tubercles, a smaller one on the top of the mesopleuræ behind and below it, and the basal half of the metapleuræ, black. The pleuræ and sternum are thickly covered with short pale pubescence; the obliquely sloped base of the latter is more shining, bare, and has a crenulated furrow down the middle; the pleuræ are closely punctured, the metapleuræ more distinctly than the rest. Legs: the four anterior are coloured like the pleuræ, the coxæ and trochanters of a paler yellow, the hinder coxæ are broadly black above and on the outer side, the femora and tibiæ are rufous, the tarsi blackish. The areolet is much narrowed at the top, being there slightly less in width than the space bounded by the recurrent and the second transverse cubital nervures; the latter is largely bullated. Abdomen testaceous, darker coloured towards the apex, the sides paler; the middle of the petiole, the basal half of the second segment, the other segments to a somewhat less extent, black, except the apical, which is rufo-testaceous; the black part of the petiole and the basal half of the yellow part closely and distinctly punctured; the middle segments are closely punctured; the gastrocœli rufous, striated.

CHIAGLAS, gen. nov.

Clypeus raised, flat, projecting out from the face. Mandibles ending in one longish tooth. Abdomen with seven segments, the last large, if anything longer than the penultimate; the ventral keel distinct on the second and third segments, indistinct on the fourth. Antennæ thickened and compressed beyond the middle. Occiput roundly incised, margined. Scutellum raised, keeled laterally at the base. Postscutellum bifoveate at the base. Median segment regularly areolated, its apex with an oblique slope; the spiracles linear. Legs normal; the tarsi spined; the hinder coxæ rounded at the base. Areolet 5-angled, narrowed at the top. Abdomen not very much narrowed at the apex; the last segment is fully developed all round; the cerci large, stout; postpetiole broad and distinctly separated.

Belongs to the Heresiarchini. It is readily known by the clypeus projecting beyond the level of the face in all its extent and by the unidentate mandibles. The male has the antennæ serrate beyond the middle; the ventral keel is as in the female; the last segment large. There are eight abdominal segments.

Chiaglas nigripes, sp. n.

Niger, flavo-maculatus; clypeo, facie orbitisque oculorum flavis; facie nigro-maculata; pedibus flavis; femoribus posticis, femoribus anterioribus subitis, dimidio apicali tibiæ posticarum tarsisque nigris; alis hyalinis, apice fumatis, nervis stigmatæque nigris. ♂. Long. 15-16 mm.

Hab. Khasia Hills.

Antennæ black; the scape with a white mark on the apex below, it is closely punctured and thickly covered with long white hair; the flagellum serrate towards the apex; the ninth to fourteenth joints white beneath. Head black; the face, clypeus, a line on the inner orbits to the end of the eyes, the outer more widely from shortly above the middle to the base of the mandibles, pale white. The face and clypeus strongly but not very closely punctured and sparsely covered with whitish hair; in the centre of the face is a large black mark, which is narrow at the top, becoming gradually wider to the clypeal foveæ; the lower edge of the clypeus is black, narrow at the sides, wider in the middle. Frontal depression smooth; the space below the ocelli closely transversely striated. Mandibles black, the palpi white. Thorax black; the edges of the pronotum, its lower edge more narrowly, two short lines on the middle of the mesonotum, the scutellum, postscutellum, two large marks on the apex of the median

segment (half on the metanotum, half on the metapleuræ), and a large mark on the base of the mesopleuræ on the lower side, touching the keel at the base and irregularly rounded at the base, pale yellow. Mesonotum closely and distinctly punctured and thickly covered with short white hair. Scutellum sparsely punctured and thickly covered with long white hair, its base and apex black; the apical black band dilated backwards in the middle. Median segment strongly and closely punctured and thickly covered with white pubescence; the supramedian area is large, about as long as broad, rounded behind, transverse below; inside it is shining, furrowed round the edges, irregularly shagreened; the apex with a few short irregular striæ; the posterior median area closely, strongly, irregularly, transversely striated; the upper part with some irregular longitudinal striæ. The pleuræ closely punctured and thickly covered with short white pubescence; the propleuræ smooth and shining at the base above, the apex irregularly striated. The four front legs are pallid yellow; the anterior femora are lined with black above and below, the middle with black above and at the base all round; the four front tibiæ are lined with black behind; the tarsi black; the hinder legs are black, except the basal half of the coxæ above and more or less of the basal half of the tibiæ, which are pale yellow; the calcaria are pale. Wings almost hyaline, the apex with a distinct fuscous-violaceous tinge, the stigma and nervures black; the areolet is narrowed above, but with the nervures not touching; the recurrent nervure is received shortly beyond the middle. Abdomen black, the apices of all the segments pale yellow; the yellow marks on the second and third are broader and interrupted in the middle; the seventh has the apex broadly yellow. The petiole is smooth, the second and third segments are closely punctured; the gastrocœli have the basal slope stoutly obliquely striated; the ventral keel is pale yellow.

• MELCHA, gen. nov. •

Arcolet small, square, the second transverse cubital nervure faint; the recurrent nervure received between the middle and the apex; the median nervure is received behind the transverse basal. Radial cellule elongate; the apical abscissa of the radius is the longer, and is curved roundly upwards at the base. Antennæ longer than the body, slightly thickened beyond the middle, which is annulated with white; the third joint is slightly but distinctly longer than the fourth. Head not much developed behind the eyes, where it is sharply oblique; the occiput distinctly and sharply margined. Eyes very large, parallel, reaching below the base of the clypeus,

but not to the base of the mandibles, which are short and have at the apex two stout, triangular, equal teeth. Parapsidal furrows distinct, deep. Median segment large and with a rounded gradual slope to the apex, the base finely aciculated, shining; this space bears two curved keels which originate at the base and are united in the middle by a short transverse keel, thus forming a central area, which is narrowed towards the apex; the part behind this is strongly reticulated and striated, the spines large, leaf-like, the spiracles small, oval. Legs longish. Petiole long, narrow, not much thickened towards the apex, curved; the spiracles placed near the base of the postpetiole. Ovipositor projecting.

Has the small areolet of *Mesostenus*, from which it may be known by the small, oval, not linear or elongate spiracles, by the longer and more slender antennæ, and by the longer, narrower, and not distinctly dilated at the apex, petiole. In the form of the petiole it does not differ much from *Cerata-cryptus*, but that, apart from the tubercles on the front, may be known from it by the elongate metathoracic spiracles. It has pretty much the form of *Priona*, but that genus has the antennæ longer, the front distinctly depressed and strongly striated; it has no enclosed area on the base of the median segment and the spiracles are more elongated.

Melcha varipes, sp. n.

Nigra, mandibulis, palpis, scutello spinisque metanoti flavis; pedibus rufis, apice femorum posticorum tarsisque posticis nigris; alis hyalinis, stigmate nervisque nigris. ♀.
Long. 11–12 mm.; terebra 3 mm.

Hab. Khasia Hills. Coll. Rothney.

Antennæ black; the fifth to ninth joints clear white, except above; the scape covered with short dark pubescence and impunctate. Head entirely black, the mandibles and palpi yellow, the mandibular teeth black. Face coarsely shagreened, the centre obscurely transversely striated; the front and vertex coarsely shagreened, the front with a stout keel down its centre; the part on either side of the keel is irregularly transversely striated; the front is broadly and distinctly depressed. Thorax black; the inner side of the tegulæ, the scutellum, the scutellar keels, the postscutellum, and the metanotal spines, yellow. Mesonotum closely punctured; the middle lobe is distinctly raised; the furrows are wide and deep. In the centre of the median segment at the base is a triangular area bordered by straight keels, the narrow part being at the apex; this area is strongly coarsely aciculated, and is separated from the postscutellar region by a smooth depression; the part between the base of the segment

and the transverse keel is closely, somewhat irregularly, longitudinally striated. The transverse keel is slightly curved backwards in the middle; in front of the keel the segment is strongly irregularly reticulated; the reticulations are much stronger, wider, and transverse at the apex; between the spines at their base is a stout curved keel; the spines are large, margined behind, and rounded at the top. The upper part of the propleuræ is coarsely rugose, the rest bears stout, slightly curved, longitudinal striations: the mesopleuræ coarsely aciculated and irregularly obliquely striated; the apex aciculated to near the bottom; the extreme apex is coarsely crenulated above. Mesosternum coarsely aciculated; the sides behind the lateral furrow coarsely striated; the central furrow is deep and crenulated; the sides at its apex obliquely striated. Wings hyaline, the areolet with its outer nervure faint; the recurrent nervure is received near its apex. The four front legs are rufo-testaceous; the fore coxæ pallid yellow; the hinder coxæ and slightly more than the basal half of the femora ferruginous; the trochanters, the apex of the femora broadly, the tibiæ (except a white line near the base), and the basal half of the metatarsus black; the rest of the tarsi white. Abdomen black; the apex of the petiole, of the second segment, and the apical two segments white; the petiole smooth, shining, and glabrous, aciculated towards the apex; near the apex, reaching to the yellow band, is a shallow depression, which is transverse at the apex.

[To be continued.]

BIBLIOGRAPHICAL NOTICES.

Fauna, Flora, and Geology of the Clyde Area. Edited by G. F. SCOTT ELLIOT, MALCOLM LAURIE, and J. BARCLAY MURDOCH. Glasgow: published by the Local Committee for the Meeting of the British Association, 1901. Pp. 1-567.

THOUGH prepared specially for the benefit of the members of the British Association Meeting at Glasgow in 1901, the usefulness of this handbook by no means ended with the dispersal of those for whom it was designed; on the contrary, it will doubtless long remain the standard work on this district, and might well serve as a model to be imitated by the resident naturalists of every meeting-place of the Association.

The number of contributors is considerable; and whilst some have given simply a list of names and localities, in systematic order, others have prefaced their work with a short and often exceedingly interesting introduction. Where necessary text-cuts are introduced; whilst at the end of the work is a large bathy-